of the terms used in the following sketch, which gives roughly the arrangement of the circles and the attending features as observed about noon.[1]

The display was most brilliant from 11:45 a. m. to 12:15 p. m., the prismatic colors being unusually strong

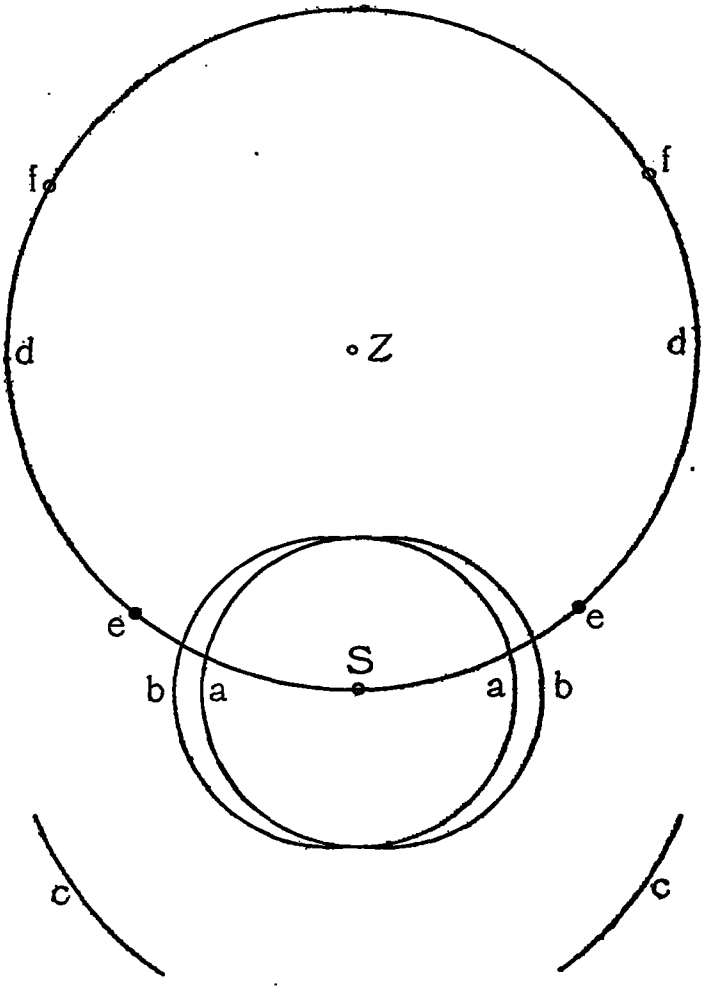

FIGURE 1.—Halo phenomena observed at Nashville, Tenn., March 16, 1918.

Ordinary halo of 22° (*aa*); circumscribed halo (*bb*); arcs of halo 46° (*cc*); parhelic circle (*dd*); ordinary parhelia of 22° (*ee*); paranthelia of 120° (*ff*); sun (*S*); zenith (*Z*).

in the upper and lower quarter arcs of the ordinary and the circumscribed halos, and fairly clear in the remaining portions of the phenomenon, except the parhelic circle, which showed no coloring. There was noted, however, in the parhelic circle at least two spots, or "knots," of white light brighter than the remaining portion of the circle, probably the ordinary paranthelia of 120 degrees (shown in the figure on p. 20 of Besson's pamphlet). The ordinary and cirumscribed halos were distant from each other about three or four degrees at the points of greatest separation on either side of the sun. The fragments (*cc*) of the halo of 46° did not stand out clearly at any time and were not visible after 12:15 p. m. The rings, however, continued complete, though with decreasing brilliancy, until after 2 p. m. By 3 p. m. the sheet of cirro-stratus clouds had become considerably denser and only the ordinary 22-degree halo appeared. At 3:50 p. m. the ordinary parhelia of 22° were again plainly visible, and at this time very close to the 22-degree circle, although when observed about noon they stood well outside (probably 5 degrees from) the cirumscribed halo.

At 4:30 p. m. there was added a still further interesting feature, namely, the circumzenithal arc, distinctly colored, and probably, although this was not positively determined, an arc of the halo of 46° tangent thereto. The latter was not so well defined as the circumzenithal arc, but its determination is believed to have been correct, especially in view of the observation about noon of its two fragmentary arcs. The circumzenithal arc and its accompanying tangent continued for 10 minutes or more. At 5:20 p. m. there was still visible a small upper arc of the ordinary 22-degree halo, and at 5:30 p. m. the phenomenon had disappeared entirely.

[1] The Besson pamphlet referred to is the 8-vo separate of the translation *Besson, L.* Different forms of halos and their observation, MONTHLY WEATHER REVIEW, Washington, July, 1914, 42: 436-446.

SOLAR HALO PHENOMENA OBSERVED MARCH 16, 1918, AT BANNERS ELK, N. C.

By T. L. LOWE, Local Observer.

(Forwarded by Mr. L. A. Denson, Meteorologist in charge, Raleigh, N. C.)

On March 16, 1918, at Banners Elk, N. C., there occurred one of the most peculiar celestial phenomena ever observed here. The thermometer registered 18°F. above zero. At about 8 a. m. there was a haze in the sky and there appeared a complete circle of luminous

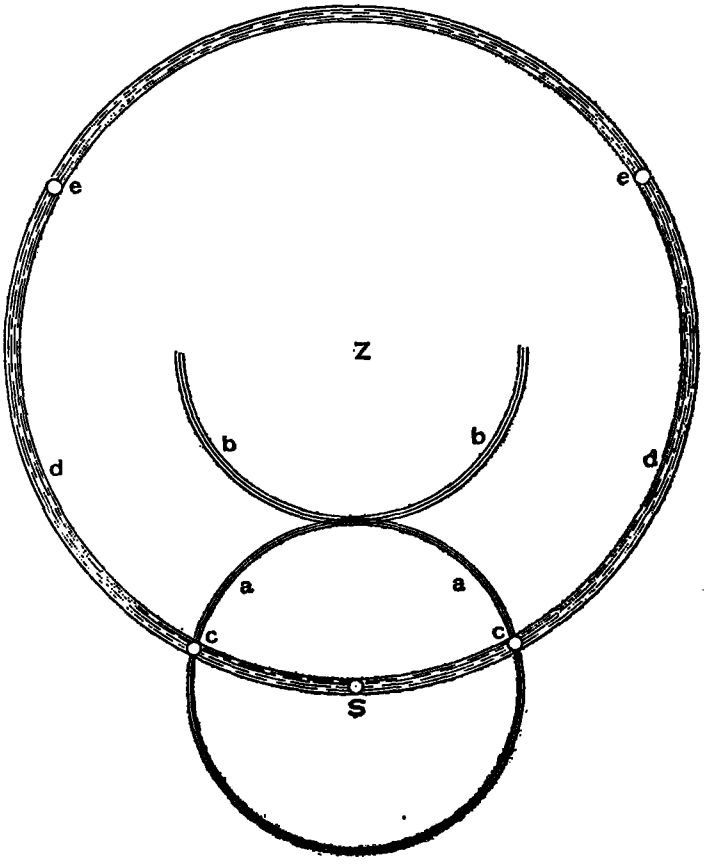

FIGURE 1.—Solar halo phenomena observed March 16, 1918, at Banners Elk, N. C.

aa, 22-degree solar halo; *bb*, upper tangent arc of 22-degree halo; *cc*, parhelia of 22°; *dd*, parhelic circle; *ee*, paranthelia of 120°; *S*, Sun; *Z*, zenith.

light around the sun with two distinct mock suns on either side, as shown in the diagram (fig. 1). Above this circle and tangent to it was a semicircle, and all around

the zenith at the altitude of the sun was a large circle of white light as shown in the diagram. The smaller circle and the semicircle tangent to it had all the prismatic colors, while the large circle was white. There were two distinct spots of white light on the outer rim of the large circle and these showed plainly for several hours. This circle gradually diminished in size as the sun rose toward the zenith. It lasted from about 8 a. m. until late in the afternoon. The mock suns followed the sun all day and were visible until about 4 p. m., when clouds became so dense that they were no longer to be seen.

NOTE.—In figure 1 Mr. Lowe presents a sketch of solar halo phenomena as they appeared at about 8 a. m. This figure and Mr. Lowe's description are of interest chiefly in the indicated length of the upper tangent arc of the 22-degree halo and in the length of time during which all of the phenomena were visible. Mr. Denson, meteorologist in charge, Raleigh, N. C., reports that somewhat similar conditions were observed at other places in the vicinity thereof, but not so well defined as at Banners Elk. The elevation of the latter is 3,750 feet above sealevel.— *W. R. Gregg.*

"SUMMER TIME"

According to the Daylight-saving Act the clocks of the United States were *advanced* 1 hour at 2 a. m. March 31, 1918; the observations recorded in this issue of the REVIEW are to be understood as still taken according to Normal Standard Time for the respective standard meridians.—C. A., jr.